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U.S. Department
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**Federal Aviation
Administration**

U.S. Department of Transportation

Federal Aviation Administration

Standard

Content and Format Requirements
for the Preparation of
Test and Evaluation Documentation

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DOCUMENT CHANGE NOTICE

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11. Configuration Item Nomenclature	12. Effectivity
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This notice informs recipients that the standard identified by the number (and revision letter) shown in block 4 has been changed. The pages changed by this DCN (being those furnished herewithin) carry the same date as the DCN. The page numbers and dates listed below in the summary of changed pages, combined with nonlisted pages of the original issue of the revision shown in block 4, constitute the current version of this specification.

13. DCN No.	14. Pages changed	S*	A/D*	15. Date
1	This document was revised by NCP 17171 and supercedes revision A in its entirety.		A	8/22/1994

*S = Indicates Supercedes Earlier Pages *A = Indicates Added Page * D = Indicates Deleted Page

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FOREWORD

This standard defines the minimum content and format requirements for the preparation of the TEMP, FAA Operational Test & Evaluation (OT&E) Test Plans, OT&E Test Procedures, and OT&E Test Reports, CMTP, DT&E/PAT&E Test Plans, DT&E/PAT&E Test Procedures, DT&E/PAT&E Test Reports, and associated Verification Requirements Traceability Matrices (VRTM).

This standard was revised to incorporate changes driven by FAA Order 1810.4B and 1810.1F. It includes more definitive requirements and format for each T&E document. It also adds the Contractor Master Test Plan, sample T&E contract information (SOW, DIDs, and CDRLs), and the OT&E and DT&E/PAT&E Plans, procedures, and reports.

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1. SCOPE

1.1 Scope. All National Airspace System (NAS) acquisition programs developed under the auspices of the Capital Investment Plan (CIP) and Research, Engineering, and Development (RE&D) Plan are required to have a T&E program that is in compliance with FAA Order 1810.4 and 1810.1. The FAA Test & Evaluation Master Plan (TEMP), Contractor Master Test Plans (CMTP), Test Plans, Test Procedures and Test Reports document the T&E program. The T&E program assures that an objective, unbiased assessment of NAS system performance requirements including operational effectiveness and operational suitability, has been made, and that technical and operational risks have been adequately addressed.

1.2 Purpose. This standard defines the minimum content and format requirements for the preparation of the TEMP, FAA Operational Test & Evaluation (OT&E) Test Plans, OT&E Test Procedures, and OT&E Test Reports, CMTP, DT&E/PAT&E Test Plans, DT&E/PAT&E Test Procedures, DT&E/PAT&E Test Reports, and associated Verification Requirements Traceability Matrices (VRTM).

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2. APPLICABLE DOCUMENTS

2.1 Government Documents. The following documents form a part of this standard to the extent specified herein. In the event of conflict between the documents referenced herein and the content of this standard, the contents of this standard shall be considered the superseding requirement.

SPECIFICATIONS

Federal Aviation Administration

NAS-SS-1000	NAS System Specification Functional and Performance Requirements for the National Airspace System
FAA-G-2100	Electronic Equipment, General Requirements

STANDARDS

Federal Aviation Administration

FAA-STD-005	U.S. Department of Transportation, Federal Aviation Administration Standard, Preparation of Specification Documents

OTHER PUBLICATIONS

FAA Orders

Order 1810.1	Acquisition Policy
Order 1810.2	Independent OT&E of MSA's
Order 1810.4	FAA NAS Test and Evaluation Policy

Handbooks

NAS-MD-110	Test and Evaluation (T&E) Terms and Definitions for the National Airspace System

2.2 Non-Government Documents. The following documents form a part of this standard to the extent specified herein. In the event of conflict between the documents referenced herein and the content of this standard, the contents of this standard shall be considered the superseding requirement.

None.

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3. REQUIREMENTS

3.1 General. FAA NAS programs are required to develop test documentation in accordance with the FAA Order 1810.4 and 1810.1. In order to insure comprehensive information is incorporated into T&E documentation, the content and format of test plans, test procedures and test reports shall adhere to this standard. Paragraphs shall not be omitted, but may be enhanced by the addition of subparagraphs in order to "tailor" the TEMP to the acquisition. In the event the information required is not available, so state and enter the source document and schedule date when the information will be available. Paragraphs or sections that do not apply to a program will use Not Applicable (N/A) where appropriate.

3.2 Test & Evaluation Master Plan (TEMP). Content and format of the TEMP shall be in accordance with Appendix I of this standard.

3.3 Operational, Test & Evaluation (OT&E) Test Plans. Content and format of the OT&E Test Plans shall be in accordance with Appendix II of this standard.

3.4 OT&E Test Procedures. Content and format of the OT&E Test Procedures shall be in accordance with Appendix III of this standard.

3.5 OT&E Test Reports. Content and format of the OT&E Test Report and the OT&E Quick Look Test Report shall be in accordance with Appendix IV of this standard.

3.6 Verification Requirements Traceability Matrices. Content and format of the Verification Requirements Traceability Matrix (VRTM) shall be in accordance with Appendix V of this standard.

3.7 Contractor Master Test Plan. Content and format of the Contractor Master Test Plan (CMTP) shall be prepared by the contractor in accordance with Appendix VI of this standard.

3.8 Developmental Test and Evaluation/Production Acceptance Test and Evaluation (DT&E/PAT&E) Test Plans. Content and format of the DT&E/PAT&E Test Plans shall be in accordance with Appendix VII of this standard.

3.9 DT&E/PAT&E Test Procedures. Content and format of the DT&E/PAT&E Test Procedures shall be in accordance with Appendix VIII of this standard.

3.10 DT&E/PAT&E Test Reports. Content and format of the DT&E/PAT&E Test Reports shall be in accordance with Appendix IX of this standard.

3.11 Sample Contract Information. Appendix X contains sample contract information to support programs in the development of the Statement of Work (SOW), Data Item Description (DID), and Contract Data Requirements List (CDRL) for FAA STD-024.

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4. QUALITY ASSURANCE PROVISIONS

This section is not applicable to this standard.

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5. PREPARATION FOR DELIVERY

This section is not applicable to this standard.

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6. NOTES

6.1 Acronyms.

AF	Airways Facilities
AP	Acquisition Plan
APB	Acquisition Program Baseline
APMT	Associate Program Manager for Test
AT	Air Traffic
CAI	Contract Acceptance Inspection
CBA	Cost Benefit Analysis
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CIP	Capital Investment Plan
CMTP	Contractor Master Test Plan
COI	Critical Operational Issue
COTS	Commercial Off The Shelf
CPP	Critical Performance Parameter
DOT	Department of Transportation
DR&A	Data Reduction & Analysis
DRR	Deployment Readiness Review
DT&E	Developmental Test and Evaluation
ECP	Engineering Change Proposal
EC	Exit Criteria
EMI	Electromagnetic Interference
FAA	Federal Aviation Administration
FCA	Functional Configuration Audit
GFI	Government Furnished Information
GFE	Government Furnished Equipment
IOT&E	Independent Operational Test and Evaluation
IRD	Interface Requirements Document
KDP	Key Decision Point
LOA	Letters Of Agreement
MAOPR	Minimum Acceptable Operational Requirements
MNS	Mission Needs Statement
MOE	Measure of Effectiveness
MOP	Measure of Performance
MOS	Measure of Suitability
N/A	Not Applicable
NAS	National Airspace System
NDI	Non-Developmental Item

OCD	Operational Capability Demonstration
OMB	Office of Management and Budget
ORD	Operational Requirements Document
OT&E	Operational Test and Evaluation
PAT&E	Production Acceptance Test and Evaluation
PCA	Physical Configuration Audit
PDR	Preliminary Design Review
PM	Program Manager
PMP	Program Master Plan
RE&D	Research, Engineering and Development
SAT	Site Acceptance Testing
SOW	Statement of Work
SRAM	System Requirements Allocation Matrix
TBM	Test Breakout Matrix
T&E	Test and Evaluation
TEMP	Test & Evaluation Master Plan
TPRC	Test Policy Review Committee
VRTM	Verification Requirements Traceability Matrix

APPENDIX I

10. CONTENT AND FORMAT OF FAA TEST AND EVALUATION MASTER PLAN

Note: The Test & Evaluation Master Plan (TEMP) is a contract between the developing organization, the user and the tester, and approved by the Test Policy Review Committee. Most importantly, it serves to support acquisition decisions by identifying areas of technical and operational risk, defining a comprehensive plan to address and resolve the risk and providing a structure for reporting the results in an objective and unbiased manner. The TEMP should be tailored to the acquisition (for example, Non-Developmental Item (NDI), Research Engineering & Development (RE&D) Procurements). The TEMP is a dynamic document and will increase in detail and focus as the acquisition progresses.

10.1 Title Page. The title page shall contain the official name of the NAS Subsystem, the name of the document (FAA Test and Evaluation Master Plan) and current version; the signatures of the Program Manager (PM) and the Associate Program Manager for Test (APMT). The signatures shall include the titles of the PM and APMT, date of the signatures and the names of the organizations represented. The title page shall contain all signatures and revision level before the FAA TEMP is distributed for TPRC review. Identify the revision level of the TEMP on the top right hand corner of the title page. Revision levels are: Initial, for a new TEMP; Revision 1, for first revision; Revision 2, for second revision.

10.2 Table of Contents. The table of contents shall contain paragraph, and subparagraph titles and page numbers. The illustrations, tables and figures shall be listed separately.

10.3 Introduction. This section shall be numbered 1.0 and contain the following subparagraphs.

10.3.1 Background. This subparagraph shall be numbered 1.1 and shall contain background information of the TEMP, (for example, current phase of acquisition and next, prior revisions, status of source documents). This paragraph shall also include whether there is Independent OT&E (IOT&E) oversight. This paragraph shall also state the type procurement. (NDI, Software only, etc.)

10.3.2 Purpose. This subparagraph shall be numbered 1.2 and shall contain the official NAS Subsystem name and the purpose of the TEMP. The initial TEMP (Concept Phase) shall present an overview of Mission Need Statement. Revised TEMPs shall present an overview of the requirements documents that establishes the base of the test program.

10.3.3 Scope. This subparagraph shall be numbered 1.3 and shall provide the scope of the T&E program addressed by the present TEMP revision, to include requirements directed by Acquisition Decision Memoranda (ADM) from previous Key Decision Points (KDP). This paragraph shall also include the relationship of the test program to the acquisition phase, and the number of NAS Subsystems in the first article buy, where each will be tested, and why those T&E sites were chosen. This paragraph shall state whether an Operational Capability Demonstration (OCD) will be or has been performed as part of an NDI acquisition strategy; and discuss how the OCD may impact the test program (for example: are the OCD test results used in lieu of additional testing to verify that system/subsystem requirements have been met).

10.4 Reference Documents. This section shall be numbered 2.0 and shall list those reference documents and baseline date, or draft date of each, which the TEMP is based, or which relate significantly to it. The following is a list of documents that may be used in the development of the TEMP; Acquisition Plan, (AP) Acquisition Program Baseline (APB), Cost Benefits Analysis (CBA), Mission Needs Statement (MNS), Program Master Plan (PMP), Acquisition Decision Memoranda (ADM), related Interface Requirements Documents (IRD's), Purchase Descriptions (PD), FAA Order 1810.4, FAA Order 1810.1, NAS-SS-1000, Operational Requirements Documents (ORD), and Project Specification.

10.5 NAS Subsystem Description. This section shall be numbered 3.0 and contain the following subparagraphs.

10.5.1 NAS Subsystem Implementation. This paragraph shall be numbered 3.1 and shall define how the subsystem requirements are to be implemented (for example, implementation using Commercial Off The Shelf(COTS) or Non Development Items (NDI) equipment, software only, and/or Research, Engineering and Development (RE&D) or full scale development).

10.5.2 NAS Subsystem. This paragraph shall be numbered 3.2 and shall provide a brief functional description of the NAS subsystem and its required inter operating NAS subsystems. The description shall include major functions and unique operational and performance characteristics.

10.5.3 Interfaces. The interface paragraph shall be numbered 3.3 and shall describe the latest NAS interface requirements. A simplified block diagram with an appropriate functional description for each interface shall be provided. The block diagram shall depict the requisite facility interfaces, remote maintenance monitoring interfaces, voice communications interfaces, and operator interfaces.

10.5.4 Critical Performance Parameters (CPP) and Critical System Characteristics. This paragraph shall be numbered 3.4 and list critical performance parameters and critical system characteristics and their associated thresholds as given in the APB and ORD. The paragraph shall identify those parameters and system characteristics which are Exit Criteria requirements. Exit Criteria is defined in FAA Order 1810.1. If no Exit Criteria has been identified so state in this paragraph.

10.5.5 Critical Operational Issues (COI). This paragraph shall be numbered 3.5 and identify all COIs and describe those COIs that effect the Test Program. This paragraph shall also describe the APMT's plan to mitigate those issues through the Test Program.

10.5.6 Minimum Operational Performance (MOP). This paragraph shall be numbered 3.6 and identify the minimum acceptable operational performance expected. MOPs may be derived from the operational requirements, operational parameters and critical system characteristics listed in the Operational Requirements Document.

10.6 T&E Program Management. This section shall be numbered 4.0 and shall contain the following subparagraphs.

10.6.1 Management. This paragraph shall be numbered 4.1 and shall describe the program T&E management and tasking responsibilities for each participating organization. If a Test Planning Working Group has been formed this paragraph shall identify the members and their roles and responsibilities. Organizational responsibilities are defined in FAA Order 1810.4 and FAA Order 1810.1 and shall be used as a guide.

10.6.2 Integrated Schedule. This paragraph shall be numbered 4.2 and shall describe the key elements of the test program schedule and contain an integrated schedule chart. The integrated schedule chart may be attached as an appendix. The integrated schedule chart shall show relative durations for acquisitions and T&E events such as Acquisition Review Committee milestones, contract award, Preliminary Design Review, Critical Design Review, Contractor Acceptance Inspection, delivery of all test plans, procedures and reports, start and competition of all T&E activities, Deployment Readiness Review (DRR), and first and last Operational Readiness Dates. The integrated schedule shall include the delivery of the first articles to test (key) sites, and any test critical dependencies on other NAS subsystem development or tests.

Figure 10.6.2-1 provides an example of the required milestones and content of the Integrated Schedule. It is understood that all schedule information may not be available during the development of the Initial TEMP. At a minimum, each version of the TEMP shall include the test schedule dates associated with the current, and next, acquisition phases.

10.6.3 Test and Evaluation Funding. This paragraph shall be numbered 4.3 and shall contain an estimate, by fiscal year, the funding required for the test program. A funding profile chart shall be developed. The chart shall show funding allocated to each phase of testing.

10.6.4 Test Plans. This paragraph shall be numbered 4.4 and shall list all the T&E Test Plans to be developed for all phases of the T&E program, the organization responsible for developing each T&E Test Plan and the expected delivery date as referenced in the Integrated Schedule Chart.

10.6.5 Test Program Resources. This paragraph shall be numbered 4.5 and shall identify the resources required to support the test program.

10.6.5.1 Manpower and Training. This paragraph shall be numbered 4.5.1 and shall identify manpower and training required during each phase of testing. Necessary Government and contractor test personnel, and required training, shall be identified. This paragraph may be developed in a matrix format.

10.6.5.2 Test Articles. This paragraph shall be number 4.5.2 and shall identify the total number of first article test systems, and the location of each first article test, including the key site.

10.6.5.3 Test Sites. This paragraph shall be numbered 4.5.3 and shall identify specific test facilities and operational locations each major phase of testing will be performed.

10.6.5.4 Test Support Equipment. This paragraph shall be numbered 4.5.4 and shall identify any special test equipment required to support the test program. For Example: aircraft (type and number), computer-driven simulation models, other required simulators, hardware/software testbeds etc.

10.6.6 Test Configuration Management. This paragraph shall be numbered 4.6 and shall define the configuration management program for the systems under test. This paragraph shall identify when configuration audits of the system will be accomplished, (for example: Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) and NAS system audits at each site to confirm each system is configured to the NAS baseline configuration).

10.7 T&E Program Description. This section shall be numbered 5.0 and shall contain the following subparagraphs.

PHASE	CONCEPT PHASE 1	DEMONSTRATION PHASE 2	DEVELOPMENT PHASE 3	PRODUCTION PHASE 4
KEY DECISION POINTS	◆ KDP 1	◆ KDP 2	◆ KDP 3	◆ KDP 4
TIME LINE (Enter month/year for each milestone identified)				
CONTRACT MILESTONE (Enter milestones that impact the test program)		◆ DEM VAL CONTRACT DATE	◆ CONTRACT AWARD (Scheduled Date) ◆ PDR (Scheduled Date) ◆ CDR (Scheduled Date)	◆ PRODUCTION CONTRACT (Schedule Date)
TEMP SCHEDULE		◆ TEMP REVISION (Enter scheduled revision date)	◆ TEMP REVISION (Enter scheduled revision date)	
TEST PLANS DEVELOPMENT			◆ CONTRACTOR'S MASTER TEST PLAN (Scheduled date) CONTRACTOR'S TEST PLANS (Enter test plans to be developed by the contractor and scheduled approval date) ◆ OT&E TEST PLANS (Enter test plans (Shakedown, Integration) to be developed and scheduled by approval dates)	
SCHEDULED TESTING		◆ DEM. VAL. DEMONSTRATION (Enter scheduled dates)	◆ DT&E TESTs (Enter scheduled time allotted to accomplish DT&E factory testing) ◆ OT&E TESTs (Enter scheduled OT&E tests and scheduled time allotted to each) ◆ OCD (Enter number and schedule dates)	◆ SYSTEM DELIVERY (Enter system delivery dates for Key Sites) ◆ DT&E/PAT&E & OT&E Follow on at Key Site, Field Site
TEST SUPPORT EQUIPMENT (Identify delivery dates of equipment required to support the test program)				

NOTE: The format used above provides a sample of information required in the TEMP Integrated Schedule.

Figure 10.6.2-1 Integrated Test Program Schedule Required Milestones and Contents

10.7.1 Completed DT&E/PAT&E. This paragraph shall be numbered 5.1 and shall identify any previously completed DT&E/PAT&E testing, including OCDs that were accomplished. This paragraph shall list CPPs and KDP Exit Criteria, in a matrix form that either have or have not been demonstrated. Also identify the test report, and/or procedures used in the verification of the requirements.

10.7.2 Completed OT&E. This paragraph shall be numbered 5.2 and shall provide the title and date of test reports that detail the results of operational testing and evaluation previously completed. Identify any COIs that either were resolved, partially resolved, or unresolved at the completion of each phase of testing.

10.7.3 DT&E Testing. This paragraph shall be numbered 5.3 and shall describe the DT&E test program planned to ensure the system design complies with system specification requirements, as required by FAA Order 1810.4. This information shall include detail necessary to plan and develop the test and evaluation section of the statement of work and the quality assurance section of the project specification. The information shall detail the government and contractor responsibilities during DT&E, (for example, describe DT&E testing to be accomplished at the factory, key sites and NAS facilities). This paragraph shall also reference CPPs, Critical System Characteristics and Exit Criteria identified in par. 10.5.4 to be demonstrated during DT&E, and the KDP milestone with which they are associated. Describe OCDs to be accomplished and their relation to the acquisition phase. This paragraph shall also identify if the contractor is required to complete Contractor Preliminary Tests (CPTs) in accordance with FAA-G-2100.

10.7.4 PAT&E Testing. This paragraph shall be numbered 5.4 and shall describe the PAT&E test program planned to ensure each production unit conforms with the accepted design and operation of the first article. This paragraph shall describe the two components of PAT&E, Factory Acceptance Testing and Site Acceptance Testing, and identify the plans leading to system selloff to the user community.

10.7.5 OT&E Testing. This paragraph shall be numbered 5.5 and shall contain an overview description of the OT&E strategy to be applied to the test program in order to satisfy NAS operational requirements. This paragraph shall describe how minimum operational performance requirements and critical technical parameters from the operational requirements document and APB will be tested; the planned approach for resolving COIs during OT&E testing and the test limitations that may impact resolutions of COIs. This paragraph shall include the program's test strategy as the program matures through each acquisition phase. Each acquisition phase shall be addressed (Demonstration Validation Phase, Full-Scale Development Phase, Production & Deployment Phase) in accordance with FAA Order 1810.1 and FAA Order 1810.4.

10.7.5.1 OT&E Integration Testing. This paragraph shall be numbered 5.5.1 and shall describe the OT&E Integration test program planned to verify the end-to-end performance of the system/subsystem, specifically testing the NAS-SS-1000 Volume I (System Level) and Volumes II through V (Subsystem Level) requirements as identified in the TEMP Verification Requirements Traceability Matrix (VRTM). This paragraph shall include program information necessary to develop the OT&E Integration Test Plan, for example: schedule, key sites, training, personnel, and integration test environment.

10.7.5.2 OT&E Operational Testing. This paragraph shall be numbered 5.5.2 and shall describe the OT&E Operational test program planned to verify the operational effectiveness and suitability of the system/subsystem in the NAS. The paragraph shall state where operational testing will be conducted and to what degree the test environment is representative of the expected operational environment. Any OT&E operational risks that may have an adverse impact on the successful completion of the testing, shall also be identified and discussed. This paragraph shall include program information necessary to develop the OT&E Operational Test Plan, for example: schedule, key sites, training, personnel, and operational test environment.

10.7.5.3 OT&E Shakedown. This paragraph shall be numbered 5.5.3 and shall describe the OT&E Shakedown program planned to verify the operational effectiveness and suitability, including supportability and maintainability of the system/subsystem in the NAS. The paragraph shall identify the user organization conducting OT&E Shakedown, and the role other FAA organizations (for example, ATR, AFS, and Regional AT and AF personnel) play in OT&E Shakedown. Also state where Shakedown shall be conducted and briefly describe the training required and how it shall be provided for personnel participating in OT&E Shakedown. This paragraph shall include program information necessary to develop the OT&E Shakedown Test Plan, for example: Field Shakedown requirements, schedule, key sites, training, personnel, and operational test environment

10.8 Acronyms and Glossary. This section shall be numbered 6.0 and shall list acronyms and definitions peculiar to the T&E program.

10.9 Verification Requirements Traceability Matrix. This section shall be numbered 7.0 and shall contain the VRTM prepared in accordance with Appendix V (Figure 50.1-1) of this standard. The NAS-SS-1000 Volume I (NAS Subsystem Level) and Volumes II through V Subsystem Level and ORD requirements shall be addressed at a minimum.

APPENDIX II

20. CONTENT AND FORMAT OF FAA OPERATIONAL TEST AND EVALUATION (OT&E) TEST PLANS

Note: The Operational Test and Evaluation (OT&E) Test Plan forms the basis for the OT&E program. It describes the various planning and preparation activities required prior to the OT&E, the testing to be accomplished, how the test procedures will be executed, and how test results will be reported. The OT&E Test Plan describes the OT&E program to a general audience, and also provides sufficient detail to guide the development of test procedures.

20.1 Title Page. The title page shall contain the official title of the system, the title of the test plan (e.g., OPERATIONAL TEST & EVALUATION TEST PLAN), and the signature(s) of the approving authorities, dates, titles and organizations represented. (Note: approving authorities are defined in FAA Order 1810.4 Appendix 1, Part 3, 1.j.19)

20.2 Table of Contents. The table of contents shall contain paragraph titles and page numbers. The illustrations, tables and figures shall be listed separately.

20.3 Introduction. This section shall be numbered 1.0 and shall contain the following paragraphs to provide the reader with the context upon which the test plan is based, including the system, the test program, and an overview of the plan.

20.3.1 Background. This paragraph shall be numbered 1.1 and shall present an overview of the system/program and the overall test program. This paragraph shall address the acquisition phase of the test program covered by the plan, as described in FAA Order 1810.1 and FAA Order 1810.4.

20.3.2 Purpose of the Test Plan. This paragraph shall be numbered 1.2 and shall define the specific purpose of the plan (for example, to describe the test program and provide a basis for development of test procedures).

20.3.3 Scope of the Test Plan. This paragraph shall be numbered 1.3 and shall identify the segment of the test program the test plan will address.

20.4 Reference Documents. This section shall be numbered 2.0 and shall contain a list of the documents that are referenced in the test plan, direct the test program and the documents needed to implement the test program.

20.5 System Description. This section shall be numbered 3.0 and shall contain the following paragraphs. This section shall describe the system to be tested.

20.5.1 System Overview. This paragraph shall be numbered 3.1 and shall contain a general system description. A block diagram of the hardware and/or software shall be included. The system description shall also summarize the operational environment into which the unit under test will be placed. This summary shall include operations concept, maintenance concept and operational training requirements as necessary. The system description shall also include operational positions affected by the unit under test.

20.5.2 Interfaces Overview. This paragraph shall be numbered 3.2 and shall functionally describe the interfaces of the system under test. A list and/or block diagram of the system interfaces shall be included.

20.6 Test Program Description. This section shall be numbered 4.0 and shall contain the following paragraphs describing the test program planned and the tests to be conducted.

20.6.1 Approach and Concept. This paragraph shall be numbered 4.1 and shall describe the overall approach to testing that is being applied to the specific test program. It addresses both the testing and evaluation aspects of the test program.

20.6.1.1 Evaluation Approach. This paragraph shall be numbered 4.1.1 and shall describe the specific areas to be evaluated, the general data collection methods, and evaluation techniques. Additional details related to the evaluations shall be included in paragraph 4.4.

20.6.1.2 Critical Operational Issues(COI)/Test Requirement Summary. This paragraph shall be numbered 4.1.2 and shall list COIs. COIs are those aspects of system functionality and operations that are critical to the evaluation of the system's operational suitability and effectiveness. This paragraph shall briefly discuss the COIs and include a list of specific evaluation criteria or measures of effectiveness (MOEs)/measures of performance (MOPs)/measures of suitability (MOSs). A graphic/matrix or narrative description of the relationship of COIs to MOEs, MOPs and MOSs shall also be included.

20.6.1.3 Minimum Acceptable Operational Requirements (MAOR). The MAORs paragraph shall be numbered 4.1.3 and shall list values for a particular parameter that is required to provide a system capability that will satisfy the validated mission need, (performance threshold).

20.6.1.4 Activities Leading to Test. This paragraph shall be numbered 4.1.4 and shall identify required program activities to be accomplished prior to the testing addressed by the plan, including previous testing (e.g., operational capability demonstration, operational evaluations).

20.6.2 Test Environment. This paragraph shall be numbered 4.2 and shall describe the test facilities where the testing described in the plan will be conducted, and number of systems to be tested. The descriptions should include the test locations and environmental conditions, (e.g., weather, terrain) as appropriate. For example, some systems may require testing at several test locations that represent the range of environmental and operational conditions in which the system will be used. Also the test configuration and specific test and analysis tools shall be described.

20.6.2.1 Test Location(s). This paragraph shall be numbered 4.2.1 and shall describe where testing will occur. If the plan covers various test phases or different test locations, each shall be described.

20.6.3 Test and Analysis Tools. This paragraph shall be numbered 4.3 and shall list and describe the test, data reduction, and analysis tools that will be used to support the testing. These tools may include hardware tools (e.g., instrumentation, prototypes/mockups) and/or software tools (e.g., simulators, software programs).

20.7 Test and/or Evaluation Descriptions. This paragraph shall be numbered 4.4 and shall describe each test and/or evaluation to be conducted. Each test/evaluation description shall contain sufficient information to plan, develop test procedures and schedule the test activities described. Additional detailed test descriptions shall be included as APPENDIX A to the test plan. The following outline describes the minimum information that shall be included in each test description.

a. Test or Evaluation Title. The test description shall specify the title of the test/evaluation and a number designation.

b. Test or Evaluation Objectives. The test description shall state the OT&E objectives/requirements the test will accomplish.

c. Test or Evaluation Criteria. The test description shall define the evaluation criteria for each OT&E objective/requirement.

d. Test or Evaluation Approach. The test description shall state the methods to be used to meet the test objectives. This description can include a list of the types of tasks or activities that will occur, the specific test conditions, and specific test scenarios and special operational situations that may occur in the test. The test approach should also specify estimates of the type and number of personnel, any special test equipment, and data collection methods.

e. Execution Time. The test description shall estimate the total time it will take to execute the test(s) described, including multiple runs of a test procedure.

20.8 Test Management. This section shall be numbered 5.0 and contain the following paragraphs.

20.8.1 Test Management Organization. This paragraph shall be numbered 5.1 and shall describe the structure and composition of the test organizations and personnel responsible to carry out the testing. This paragraph shall address the following areas.

a. Roles and Responsibilities. Identify the various organizations and personnel that will conduct and support the testing.

b. Other Participating Organizations. Describe specific roles and responsibilities beyond those described in agency orders or directives. The description could include just a simple reference to the directives (e.g., "Organizational roles and responsibilities will be as described in FAA Order 1810.4"), but should include some specific information (for example, the use of operational user teams as test subjects or test observers).

c. OT&E Working Group. If the OT&E Working Group has been formed, describe its role and identify its members by number of personnel and organization.

d. Test Conduct Team(s). Describe the positions and duties of the test team(s) that will conduct the tests. The organizations represented on the test team shall be defined (for example, Test Manager will be an active field representative).

20.8.2 Training. This paragraph shall be numbered 5.2 and describe the range and level of training and familiarization needed to develop test procedures and execute tests. The following areas of training shall be addressed:

a. Test Developer Training. Describe the type of knowledge (system and operational) that the test developers need, and where and when they should obtain it.

b. Test Participant Training. Describe the type of knowledge (system and operational) that the test participants need according to their various roles (e.g., test subject, observer, DR&A). For example, test subjects for operational testing should receive training that represents the training to be received to perform their jobs with the new system.

c. Special Training Requirements. Describe any special knowledge needed by the test team(s) (e.g., familiarization with the test program and the test facility, use of special test tools).

20.8.3 System Configuration Management. This paragraph shall be numbered 5.3 and shall describe the methods for ensuring the system under test is consistent (for example, configuration audits). The paragraph shall identify how changes to the baseline system (audited system) will be controlled.

20.8.3.1 Testbed Configuration. This paragraph shall be numbered 5.3.1 and shall describe the configuration of the testbed, if a testbed will be used in place of an operational site. The paragraph shall describe the extent of the testbed configuration audit (hardware LRU by part number/serial number, revision level, software by version and build date) and when the audit shall be conducted in relation to test schedule. This paragraph shall describe how closely the testbed represents the actual, intended operational environment. For example, some testing may be performed using simulators and other drivers, and may not include actual interfaces and external equipment.

20.8.4 OT&E Entry Criteria. This paragraph shall be numbered 5.4 and shall describe a list of the items and conditions, such as planned project milestones, that must be met before the testing can begin. The description should include the limitations on the effectiveness of the testing if these conditions are not met. (Note: A test procedure should include more specific test readiness criteria).

20.8.5 Test Execution. This paragraph shall be numbered 5.5 and shall describe the process for conducting a test session. Included should be a description of the pre-test and post-test briefings and when they will occur relative to the test. Also, the specific criteria for proceeding with a test (e.g., test procedures dry run and red-lined, required training completed) and the procedures for conducting individual tests should be included, as well as general criteria to warrant a re-test.

20.8.6 System/Operational Deficiency Reports. This paragraph shall be numbered 5.8 and shall describe the process of recording, tracking and correcting deficiencies experienced during OT&E testing.

20.8.7 OT&E Exit Criteria. This paragraph shall be numbered 5.6 and shall describe the measures/metrics or other conditions that must be met in order to declare that a series of tests are complete, and/or a test program is complete and has met its objectives. The completion criteria may include factors beyond the control of the testing organization (for example, schedule deadlines). (Note: A test procedure should include more specific completion criteria (for example, success criteria).

20.8.8 OT&E Reports. This section shall be numbered 5.7 and shall identify test reports as required by FAA Order 1810.4. This paragraph shall also identify the type of test report, when the report will be published, who will be on distribution, and what the contents will include. (Note: Format and content of test reports are described in Appendix IV).

20.8.9 OT&E Schedule. This paragraph shall be numbered 5.9 and shall contain a testing schedule to the detail that is known at the time of test plan development. The test schedule shall be presented as a GANT chart, and shall include other development/acquisition activities and milestones as appropriate to indicate the interdependencies. (Note: Basic schedule information should be derived from the TEMP)

20.8.10 Personnel Resource Requirements. This paragraph shall be numbered 5.10 and shall describe the personnel needed for each phase of testing. The description shall include the skills and operational positions required and their roles in testing, the organizations supplying the personnel, and the time periods that they will be requested for. This information should be presented in a table.

20.8.11 Planning Considerations and Limitations. This paragraph shall be numbered 5.11 and shall describe factors that may affect the full achievement of the testing concepts and goals. Any known limitations to achieving complete resolution of test requirements (e.g., lack of true realism due to simulation rather than live operations) should be described. This paragraph shall define the planned workarounds and resolution to known limitations. This paragraph shall also discuss critical interface issues and/or interfaces that will not be available/tested.

20.9 Acronyms and Glossary. This section shall be numbered 6.0 and shall list acronyms and definitions peculiar to the test plan/program.

20.10 Appendices. Appendices shall be added to the test plan, as appropriate, to add detailed information. The appendices shall be identified sequentially, starting with the letter A, and appear in the following order:

20.10.1 Test and/or Evaluation Descriptions. This appendix shall provide the detailed information on tests/evaluations to be conducted as described in Section 4.

20.10.2 VRTM. This appendix shall include the OT&E requirements and NAS-SS-1000 requirements. The VRTM will indicate the specific tests (at the level described in the test plan) where each requirement is being addressed.

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APPENDIX III

30. CONTENT AND FORMAT OF OT&E TEST PROCEDURES

30.1 Title Page. The title page shall contain the official name of the system, the title of the test to be accomplished and the words OT&E TEST PROCEDURES. The title page shall contain the signatures of the approving authority, date, title, and the organization represented. (Note: approving authorities are defined in FAA Order 1810.4 Appendix 1 Part 3 1.j.(19))

30.2 Table of Contents. The table of contents shall contain paragraph titles and page numbers. The illustrations, tables and figures shall be listed separately.

30.3 Introduction. This section shall be numbered 1.0 and shall provide an overview/brief description of testing to be accomplished.

30.4 Reference Documents. This section shall be numbered 2.0 and shall contain all reference documents used in the development of the Test Procedure.

30.5 Test Description. This section shall be numbered 3.0 and shall contain the following paragraphs. This section shall describe the unit under test and how it will be placed in its operational environment. (This section is based on the system description presented in OT&E Test Plan.) Any known variations from the system to be fielded shall be noted.

30.5.1 Test Overview. This paragraph shall be numbered 3.1 and contain a general system description. A block diagram of the hardware and/or software shall be included. The system description shall also summarize the operational environment into which the unit under test will be placed. This summary shall include operations concept, maintenance concept and operational training requirements as necessary. The system description shall also include operational positions affected by the unit under test.

30.5.2 Interfaces. This paragraph shall be numbered 3.2 and shall describe how the interfaces of the unit under test are to physically and functionally perform during the test.

30.6 Test Program Description. This section shall be numbered 4.0 and shall be a summary of the Test Program as presented in the OT&E Test Plan.

30.7 Test Management. This section shall be number 5.0 and shall contain the following paragraphs.

30.7.1 Test Director. This paragraph shall be numbered 5.1 and shall define the Test Director's roles and responsibilities in conducting the test.

30.7.2 Coordination. This paragraph shall be numbered 5.2 and shall describe the coordination required prior to/during/after testing.

30.7.3 Deviations. This paragraph shall be numbered 5.3 and shall define any deviations from the OT&E Test Plan. This paragraph shall address what effect the deviations will have in meeting the test objectives/requirements.

30.7.4 Data Elements. This paragraph shall be numbered 5.4 and shall provide a summary and definition of all data elements to be collected during the test. (Note: The data elements must support the validation of the OT&E test objectives/requirements listed in the Test Description of the OT&E Test Plan).

30.7.5 Data Base Design and Structure. This paragraph shall be numbered 5.5 and shall provide a description of the architectural structure of the data base containing electronically recorded test data that will be used to evaluate the system.

30.8 Appendix. This Appendix shall be labeled Test Procedures and shall contain the detailed individual test procedures. Each individual test procedure shall be a self-contained information packet that provides all the information necessary for the tester to set up, conduct and collect data from the test.

Individual test procedures shall be written in small logical units of work to facilitate resumption of testing after scheduled or unscheduled interruptions with a minimum of reconfiguration.

The minimum requirements for the contents of individual test procedures include:

a. Title. A unique test procedure identification which is preferably based on a numbering convention used in the Test Plan. Identification may be based upon test (or requirement) series, category, subcategory or other alpha-numeric designation.

b. Test Objective(s). Detailed objectives of this particular test procedure. Reference to the OT&E Test Objective(s)/Requirement(s) being evaluated by this test procedure shall be noted.

c. Initial Set up/Configuration. State the initial conditions that must be present prior to the start of the test. Examples include: operational software and/or hardware levels, hardware configuration, environmental conditions, normal or degraded conditions. This section may be in the form of a checklist, if desired.

d. Test Personnel Requirements. List the types, number and skill levels of test participants required to execute the test, include any demographics as applicable. State the type, number and skill levels of test monitors and test support personnel required.

e. Test Support Hardware, Software and Documentation. List the test support hardware, software and documentation required to execute the test. In addition, list any operational, procedural or reference manuals required by the test participants (maintainers, operators, controllers, etc.) to use during the conduct of this test procedure.

f. Measures of Effectiveness (MOE). Identify the MOEs that measure the system's task accomplishment as it relates to the Critical and other Operational Issues. Describe the MOEs with enough specificity to adequately measure the operational capability in terms of mission completion. Example: High reliability in radar detection.

g. Measures of Performance (MOP). List the MOP that quantitatively or qualitatively measure the system's capabilities or characteristics as they relate to the MOEs. Describe the MOPs (objective or subjective) that will define all the test outcomes (data) that must be gathered and then aggregated to completely evaluate the system. An MOP may serve to satisfy more than one MOE. Example: The mean false detection rate.

h. Evaluation Criteria. Identify the standards used to judge the achievement of operational effectiveness and suitability as they relate to a level of performance against which system characteristics and capabilities are compared. Identify the data required to satisfy the requirement. Example: Two false detections per hour of test scenario.

i. Procedures. The test procedures shall be written in detailed step-by-step instructions. Step by step procedures for conducting the test shall be provided. These procedures shall include: all test actions, sequence of actions and the proper responses to the actions. Test events shall be described in the order in which they are planned to occur, with dependency of any one event on another so indicated. Test responses/outputs with specified allowable tolerances shall be indicated.

Test Procedures shall contain the following information:

1. Each step shall have an action step with the expected response to the action.

2. Exceptions to action steps shall be instructions to the tester, which shall be defined as such.

3. Test procedure steps that validate requirements will list the criteria and all requirements verified by the procedure.

4. Test procedures shall be written in logical units of work to facilitate resumption of testing after scheduled or unscheduled interruptions of testing.

5. Each action with an expected response will contain an initial block for the test director and/or his/her representative

6. Each test and/or sub-test shall contain a sign off sheet for the test director.

j. Data Collection, Recording, and Reduction. Describe how data will be collected, recorded, and reduced for processing. Identify the forms, formats, equipment, procedures, and resources to be used in gathering test data. Example: Data collection personnel will record false detections on a data collection form and will attach to procedures; completed forms will be collected at the end of the day and keyed into the central data base during the second shift so as to be available for review and analysis the following day.

k. Analysis Methods. Describe how the data is to be displayed and analyzed to lead to evaluation of the MOPs/MOEs and COIs. Example: The mean false detections per hour will be displayed in a diagram, figure, etc. used to support data and/or results.

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APPENDIX IV

40. CONTENT AND FORMAT OF OT&E TEST REPORTS

40.1 Title Page. The title page shall contain the official name of the system, the name of this document and the signatures of the approving authority, date, title, and the organization represented. (Note: approving authorities are defined in FAA Order 1810.4 Appendix 1 Part 3, 1.j.(19))

40.2 Executive Summary. This section shall briefly summarize the OT&E Test Report, explain the OT&E and significant results for a management audience. The Executive Summary shall include background information of the system under test, test type, purpose, location and date, highlights of the results, significant conclusions, and significant recommendations.

40.3 Table of Contents. The table of contents shall contain paragraph titles and page numbers. The illustrations, tables and figures shall be listed separately.

40.4 Introduction. This section shall be numbered 1.0 and shall contain the following paragraphs. This section shall provide background information necessary to understand the OT&E Test Report.

40.4.1 Purpose of Report. This paragraph shall be numbered 1.1 and shall state the purpose of the OT&E Test Report.

40.4.2 Scope of Report. This paragraph shall be numbered 1.2 and shall briefly summarize the contents and arrangement of the report.

40.5 Reference Documents. This section shall be numbered 2.0 and shall contain all reference documents used in the development of the Test Report.

40.6 System Description. This section shall be numbered 3.0 and contain the following paragraphs.

40.6.1 Mission Review. This paragraph shall be numbered 3.1 and shall briefly summarize the system mission and functions and its relationship to the NAS.

40.6.2 Test System Configuration. This paragraph shall be numbered 3.2 shall include a description of the NAS subsystem, including hardware and software, that was tested, as opposed to the expected operational system. A full description of any software and hardware changes made during testing shall be presented. All of the descriptions included in this paragraph shall be detailed enough so that the person with the proper technical background, but without previous knowledge of the system, shall have a complete understanding of how the system operates and any constraints under which it was tested.

40.6.3 Interfaces. This paragraph shall be numbered 3.3 and shall describe all NAS interfaces applicable to the tested system. Describe the status of each interface in reference to the test (i.e., actual interface used, simulated by, deferred, not available, etc.).

40.7 Test & Evaluation Description. This section shall be numbered 4.0 and shall contain the following paragraphs which shall provide details of how the actual testing was conducted. Unforeseen situations and problems that occurred during testing shall be described.

40.7.1 Test Schedule & Locations. This paragraph shall be numbered 4.1 and shall contain all dates and locations pertinent to the test.

40.7.2 Participants. This paragraph shall be numbered 4.2 and shall contain all participants and the function they performed.

40.7.3 Test and Specialized Equipment. This paragraph shall be numbered 4.3 and shall list all major test equipment utilized. State whether the test equipment was GFE, standard or specifically design test equipment (i.e., simulators). Also, calibration dates, if critical, shall be included.

40.7.4 Test Objectives/Criteria. This paragraph shall be numbered 4.4. and shall describe the test objectives/criteria validated (as described in the test descriptions contained in the test plan) and shall follow through to the test results and conclusions sections.

40.7.5 Testing Descriptions. This paragraph shall be numbered 4.5. and shall identify the Test Descriptions (as outlined in the test plan) and or sub-tests completed (using FAA Order 1810.4 for guidance regarding test sub-elements). This paragraph shall give the reader a picture of how the test was structured. Within each test description "critical test" issues shall be addressed.

40.7.6 Data Collection and Analysis Method. This paragraph shall be numbered 4.6. This section shall explain how the test data was obtained and what methods of analysis were utilized to obtain the results. The explanation of the analyses methods shall be in sufficient detail so that a person with adequate technical background could take the raw data and produce the same results.

40.8 Results and Discussion. This section shall be numbered 5.0. This section shall document the data collected during the test and the analyses which were performed to yield the final results. (If the volume of results is too large to include in the report it shall be referenced.) Trouble reports that were generated shall be discussed and how the problem was resolved. The results shall be discussed by critical operational issues (COIs) and their resolution. Enough summary tables of actual collected or analyzed information shall be included in the report to provide full back-up for the report's conclusions and recommendations. As the results are presented they shall be discussed relative to test requirements and test objectives presented in the test plan. Any testing that had to be deferred shall be addressed along with the reason for the deferral.

40.9 Conclusions. This section shall be numbered 6.0 and shall state facts and conclusions that logically flow from, and can be supported by, the specific results. Highlight the significant conclusion supported by the specific results. Highlight the significant capabilities, advantages, and shortcomings of the system. Indicate if regression testing will be necessary, the requirements to be retested, impact to the test program and where the test will take place.

40.10 Recommendations. This section shall be numbered 7.0 and shall state recommendations in the same order as discussed in the Results and Conclusions paragraphs. Make sure recommendations follow logically from the results and conclusions. Discuss details or risks/benefits, if known. If there are no recommendations, so state.

40.11 Quick Look Reports. Quick Look Reports are provided to Program Managers within 10 to 15 calender days following completion of test. With the short turnaround it is recognized that data analysis will not be complete and a full test report can not be provided. The quick look report shall provide management with a short background on the test, a summary of test activities including the test article configuration, the significant test results that are known at the time, and a preliminary test result synopsis or conclusions. At a minimum, the following sections from an OT&E Report format shall be included: (Note: approving authorities are defined in FAA Order 1810.4)

40.11.1 Introduction. See paragraph 40.4 of this appendix content information.

40.11.2 Test & Evaluation Description. See paragraph 40.7 of this appendix for content information.

40.11.3 Results and Discussion. See paragraph 40.8 of this appendix for content information.

40.11.4 Synopsis/Conclusions. See paragraph 40.9 of this appendix for content information.

40.11.5 Recommendations. See paragraph 40.10 of this appendix for content information.

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APPENDIX V

50. CONTENT AND FORMAT OF VERIFICATION REQUIREMENTS TRACEABILITY MATRICES

NOTE: The sample VRTMs provided are generic and are derived from FAA Order 1810.4.

The Verification Requirements Traceability Matrix (VRTM) serves three primary purposes.

a. Project Specification VRTM. The project specification VRTM shall specify the expected contractor testing requirements for qualification of the designed Hardware\Software in satisfying the functional and performance requirements contained in the FAA system/segment project specification. Specifications that individually or collectively compose CPPs or ECs or will serve to resolve COIs will be annotated. The Project specification VRTM shall be required in all Contractor Master Test Plans (CMTP); when the matrix contains information on the resolution of CPPs, ECs or COIs it will be included in the TEMP.

b. FAA TEMP VRTM. The FAA TEMP VRTM relates the CPPs to the respective validating DT&E events.

c. FAA TEMP VRTM. The FAA TEMP VRTM will also map COIs and their constituent MOEs, MOS, and MOPs to the DT&E and OT&E events that will serve to resolve them.

50.1 Project Specification VRTM. (Figure 50.1-1) The project specification VRTM shall contain all requirements for satisfying the system's functional and performance requirements contained in the FAA system/segment project specification.

50.1.1 Format. The Project Specification VRTM shall conform, as closely as practical to the format shown in Figure 50.1-1. Each VTRM will reflect preparation and submission date information.

50.1.2 Content.

50.1.2.1 Titles. Each VRTM shall have row/column titles which identify the system/subsystem, FAA document number, paragraph number and title, T&E test component, and remarks.

50.1.2.2 Project Identification. The project will be identified by the full system name, the acronym, the FAA Specification document number.

50.1.2.3 Specification Paragraph Number and Title. The left column will contain the specification paragraph number and title exactly the way it appears in the specification document. A unique row in the matrix will be allocated to each requirement. Multiple requirements, "shalls", in a single numbered paragraph, will be assigned unique identification. When requirements are to be demonstrated in different system states and environmental conditions, these states and conditions will be given further unique identification and will be listed in a separate row in the matrix. This will facilitate requirement validation tracking by providing a unique reference number for every requirement in the specification.

50.1.2.4 Critical Operational Issues, Critical Performance Parameters, and Exit Criteria. Requirements that, individually or collectively, serve to test, demonstrate, or resolve, COIs, CPPs, and ECs will be identified in the matrix.

50.1.2.5 Test Component, Test Phases, Test Levels, and Test Locations. Separate columns for this information should be included when appropriate. Additionally, government or contractor facility and test management should be noted.

50.1.2.6 Legend. A legend identifying each abbreviation and acronym used in the Project Specification VRTM shall be included with the VRTM.

50.1.2.7 Verification Methods. Verification methods shall be selected from the following (as defined in FAA Order 1810.4):

Verification Level & Methods And Test Implementation:

T = Test
D = Demonstration
A = Analysis
I = Inspection
L = Verified By Lower Layer Requirements
X = Not Applicable

Qualification Status:

Q = Deferred Qualification Requirements
(Does Not Exist In NAS Now)
P = Previously Qualified
(Exists In NAS But Will Not Be Re-Demonstrated)
R = Previously Qualified And Will Be Re-Demonstrated

50.2 FAA TEMP VRTM. (Figure 50.2-2) The FAA TEMP VRTM shall contain all requirements that are to be verified as part of the test program. All DT&E and OT&E test requirements for satisfying the systems/subsystems requirements as specified in NAS-SS-1000 and the systems Operational Requirements Document (ORD)

50.2.1 Format. The FAA TEMP VTRM will conform, as close as possible with Figure 50.2-2.

50.2.2 Content.

50.2.2.1 Titles. The SAMPLE FAA TEMP VRTM in Figure 50.2-2 contains the minimum required column titles for the TEMP VRTM.

50.2.2.2 Project Identification. The project will be identified by the full system/subsystem name and the acronym.

50.2.2.3 Critical Operational Issues, Critical Performance Parameters, and Exit Criteria. The matrix shall contain a column identified as COIs, CPPs and ECs. that are associated with a specific requirement as identified in the program acquisition documentation and FAA Order 1810.1.

50.2.2.4 Minimum Acceptable Operational Requirements. The FAA TEMP VRTM shall contain MAORs. MAORs are stated thresholds for operational performance below which the system will not meet mission needs. These thresholds may apply to mission tasks, in which case they would be associated with MOEs and MOSs, or they may represent system performance minimums, and relate directly to MOP criteria. MAORs, when available, must be included, and so annotated, at the appropriate level (MOE or MOP) in the threshold column of the VRTM.

50.2.2.5 Legend. A legend identifying each abbreviation and acronym used in the FAA Temp VRTM shall be included with the VRTM.

50.2.2.6 Verification Methods. Verification methods shall be selected from the following:

Verification Level & Methods And Test Plan Implementation:

- T = Test
- D = Demonstration
- A = Analysis
- I = Inspection
- L = Verified By Lower Layer Requirements
- X = Not Applicable

NAS Qualification Status:

- Q = Deferred Qualification Requirements (Does Not Exist In NAS Now)
- P = Previously Qualified (Exists In NAS But Will Not Be Re-Demonstrated)
- R = Previously Qualified And Will Be Re-Demonstrated

Project Specification Verification Requirements Traceability Matrix (VRTM)

Section 3 Requirements Paragraph Reference for Specification _____ SCN _____ Para. No. Title	DT&E	PAT&E Factory Acceptance	PAT&E On-Site Acceptance	EC COI CPP	REMARKS
3.1.1.1 Aircraft I.D	D				
3.1.1.2			T	CPP	
3.1.1.3	D		D	EC-KDP 3	
3.2.1.1 Sys Alignment	TD	D		COI	
3.3.1.1 Transmit Time	T		T	EC-KDP 3	
3.3.1.2 Receive Time	T			CPP	

Figure 50.1-1 Sample Verification Requirements Traceability Matrix (Specification)

TEST DESCRIPTION ID#	REQUIREMENTS para. ref:	DESCRIPTION	DT&E	PAT&E		INTEGRATION	OPERATIONAL	SHAKE DOWN	THRESHOLD MAJOR	EC COI CPP	REMARKS
				FAT	SAT						
	SS-1000										
SS-001	10.2.1	Aircraft ID			D		T		100 NM	CPP	
SS-002	10.3.1	Display	D				D			EC-KDP 3	
	10.3.2	RMMS	TD			D				COI	
	ORD										
OR-001	3.3.2.1	Tech Data		I				T	Error Free	EC-KDP 3	
	3.3.2.2	Repair Time						D	+-2%	CPP	
	3.3.2.3	Clarity						D	2% Misinterpret		
	SYSTEM SPEC										
ID-001	3.4.2.1	Sys Alignment	T	T	D		D		+-.05 Deg	CPP	
ID-002	3.5.3	X ray radiation	T		D		T		+-.2	CPP	
	3.5.3.2.1	Sys. Security	D		D			D			
Note: This column not required in an Initial TEMP developed in the Concept phase									Note: This column not required in an Initial TEMP developed in the Concept phase		

Figure 50.2-2 Sample Verification Requirements Traceability Matrix (FAA)

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APPENDIX VI

60. CONTENT AND FORMAT OF CONTRACTOR MASTER TEST PLAN

60.1 Title Page. The title page shall contain the name of the program and the words CONTRACTOR'S MASTER TEST PLAN. The title page shall contain the signatures of the contractor's program manager, the contractor's test program manager and the contractor's quality assurance manager. The title page shall contain all signatures before the Contractor Master Test Plan (CMTP) is submitted for Government review and approval.

60.2 Table of Contents. The table of contents shall contain paragraph titles and page numbers. The illustrations, tables and figures shall be listed separately.

60.3 Introduction. This section shall be numbered 1.0 and shall be divided into the following paragraphs.

60.3.1 Purpose. This paragraph shall be numbered 1.1 and the following statement shall be included in the introduction in its entirety: "The purpose of this test program is to validate requirements in system specification _____ (*enter contract system specification number*) for the _____ (*enter official system title and contract number*). This CMTP documents _____ (*enter contractor's company name*) test program strategy in order to meet the requirements of the contract."

60.3.2 Scope. This paragraph shall be numbered 1.2 and shall provide an overview of the contractor's test program. The contractor shall give a general description of the tests to be accomplished, location where the testing will occur, and systematic arrangement of testing. Subcontractor testing, when applicable, shall be included.

60.4 Reference Documents. This section shall be numbered 2.0 and shall contain all reference documents used in the development of the CMTP, including all requirements documents listed/referenced in the system specification and contract.

60.5 System Description. This section shall be numbered 3.0 and shall contain the following paragraphs.

60.5.1 System. This paragraph shall be numbered 3.1 and shall describe the systems to be tested, and include the major functions of subsystems. The contractor shall also provide a functional block diagram of the system and subsystems.

60.5.2 Interfaces. This paragraph shall be numbered 3.2 and shall contain a simplified block diagram with a functional description for each interface. The contractor shall include the remote maintenance monitoring interface, voice communications interface, operator interface, facility interfaces, and any interface required to validate the system specification requirements.

60.6 Summary of T&E Resources. This section shall be numbered 4.0 and shall contain the following paragraphs. Resources identified in the following paragraphs shall reference the test associated with each resource.

60.6.1 Personnel. This paragraph shall be numbered 4.1 and shall describe personnel resources needed to accomplish the test program.

60.6.2 Facilities. This paragraph shall be numbered 4.2 and shall identify facilities required to accomplish the test program.

60.6.3 Test Equipment. This paragraph shall be numbered 4.3 and shall identify test equipment required to accomplish the test program.

60.6.4 Other Resources. This paragraph shall be number 4.4 and shall describe other resources, not identified in the previous paragraphs, necessary to accomplish the test program.

60.7 Test Management Program. This section shall be numbered 5.0 and shall be divided into the following paragraphs.

60.7.1 Management. This paragraph shall be numbered 5.1 and shall describe the contractor's management responsibilities for the test program. The contractor shall include an organizational chart with names of individuals responsible for each department and/or subcontractor participating in the test program.

60.7.2 Test Identification. This paragraph shall be numbered 5.2 and shall list all tests to be accomplished in each test phase. Tests shall be labeled with a unique test identifier for ease and consistency of reference throughout the test program.

60.7.3 Test and/or Evaluation Descriptions. This section shall be included in Appendix B and shall describe each test and/or evaluation identified in paragraph 5.2. Each description shall be identified and contain sufficient information to plan/schedule test activities. The following outline describes the minimum information that shall be included in each test description.

a. Test or Evaluation Title. The test description shall specify the title of the test/evaluation and the test identifier.

b. Test or Evaluation Objectives. The test description shall list the objectives/requirements and success criteria the test will validate.

c. Test or Evaluation Approach. The test description shall state the methods and/or the environment to be used to validate the objectives/requirements.

d. Execution Time. The test description shall estimate the total time it will take to execute the test(s) described, including multiple runs of a test procedure.

e. Location. The test description shall identify where the test will be accomplished.

60.7.4 Subordinate Test Plans. This paragraph shall be numbered 5.3 and shall identify the appropriate test plan that will further detail each test referenced. All critical functionalities and items required to complete each test shall be itemized. Identify all subordinate test plans the contractor shall provide in order to meet the requirements of the contract. (e.g. Design Qualification Test Plans, Software Test Plans, Reliability, Maintainability, EMI, Site Acceptance, Production Acceptance, etc.)

60.7.5 Integrated Schedule. This paragraph shall be numbered 5.4 and shall contain the test program integrated schedule. The integrated schedule shall contain major contract milestones and test program milestones that show how the contractor intends to meet contract schedule.

60.7.6 Configuration Management on Unit Under Test. This paragraph shall be numbered 5.6 and shall describe how configuration of each unit under test will be controlled.

60.7.7 Problem Reporting and Resolution. This paragraph shall be numbered 5.6 and shall describe the failure/problem identification, reporting, and resolution process. The paragraph shall identify the documentation to be used in this process. Also this paragraph shall describe the role of the quality organization and configuration management in the resolution process.

60.8 Requirements Traceability/Allocation Matrix.

60.8.1 Verification Requirements Traceability Matrix (VRTM). A VRTM shall be submitted as Appendix A to the CMTP. This VRTM shall be prepared in accordance with Appendix V of this standard and shall be based upon the System specification, contract and subordinate requirements. The VRTM shall clearly itemize the method of test for each specification requirement for each test phase. Upon Government approval, this VRTM will only be changed via an Engineering Change Proposal (ECP) to the CMTP.

60.8.2 System Requirements Allocation Matrix (SRAM). For the purpose of test planning, a System Requirements Allocation Matrix shall be developed. The SRAM shall be submitted as Appendix C to the CMTP. This SRAM shall clearly indicate the allocated test that validates each requirement. If two or more tests are required to validate a requirement, the SRAM shall indicate the pretests and the validating test. The level of verification (test effort) for each requirement shall be shown. In addition, a formal mechanism for updating the SRAM after approval of the CMTP shall be established. A sample SRAM is provided in Figure 60.8.2-1.

Requirement	Description	Test Method	Interface Test,IF-1	RMS DEMO RD-1	EMI EM-1	CSCI-1 CS-1a	CSCI-2 CS-2a
3.1.3.3.2	System Modes	T	X	X			
3.1.3.3.3	Maint Mode	D		X			
3.2.1.3	Radiation	T			X		
3.2.1.4	Data Report	TD		X		X	
3.2.1.5	Time Report	TD	X				X

Figure 60.8.2-1 Sample System Requirements Allocation Matrix (SRAM)

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APPENDIX VII

70. CONTENT AND FORMAT OF DEVELOPMENTAL TEST AND EVALUATION (DT&E) & PRODUCTION ACCEPTANCE TEST AND EVALUATION (PAT&E) TEST PLANS

Note: The DT&E Test Plan format shall be tailored to the type of test, and or phase of testing required by contract (Production Acceptance, Site Acceptance, Factory Acceptance, Software testing, System testing etc).

70.1 Title page. The title page shall contain the name of the program and the type of test plan (for example, SOFTWARE TEST PLAN, SITE ACCEPTANCE TEST PLAN) The title page shall contain the signatures of the program manager, the test program manager and the quality assurance manager. The title page shall contain all signatures before the test plan is submitted for review.

70.2 Executive Summary. The Executive Summary shall start on a new page. The Executive Summary shall contain an overview of the test plan, which shall include: test plan's relationship to the overall test program, the relationship of the test plan to contract requirements, and significant system or program information considered important to completing the tests outlined in the test plan.

70.3 Table of Contents. The table of contents shall contain paragraph titles and page numbers. It shall list each test description. The illustrations, tables and figures shall be listed separately.

70.4 Introduction. This section shall be numbered 1.0 and divided into the following paragraphs.

70.4.1 Purpose. This paragraph shall be numbered 1.1 and the following statement shall be included in the introduction in its entirety: "The purpose of this test plan is to validate requirements assigned to this phase of testing required by _____ (*enter contract system specification number*) for the _____ (*enter official system title and contract number*). This test plan documents _____ (*enter contractor's company name*) test strategy in order to meet the requirements of the contract."

70.4.2 Scope. This paragraph shall be numbered 1.2 and shall provide an overview of the strategy of validating requirements assigned to the phase of testing covered by the test plan. The paragraph shall give a general description of the tests to be accomplished, location of the testing, the systematic arrangement of testing, and include all subcontractor testing, when applicable.

70.5 Reference Documents. This section shall be numbered 2.0 and shall contain all references documents used in the development of the test plan, including all requirements documents listed/referenced in the system specification and contract.

70.6 System Description. This section shall be numbered 3.0 and divided into the following paragraphs.

70.6.1 System. This paragraph shall be numbered 3.1 and shall describe the systems/subsystems to be tested, and include major functions of subsystems. The paragraph shall also contain a functional block diagram of the system and subsystems.

70.6.2 Interfaces. This paragraph shall be numbered 3.2 and shall contain a simplified block diagram with a functional description for each interface. The paragraph shall include facility interfaces, remote maintenance monitoring interface, voice communications interface, operator interface, and any interface required to validate the system specification requirements.

70.7 Test Program Management. This section shall be numbered 4.0 and divided into the following paragraphs.

70.7.1 Management. This paragraph shall be numbered 4.1 and shall describe the contractor's management responsibilities for the testing phase by the test plan. The paragraph shall include an organizational chart with names of individuals responsible for each department and/or subcontractor participating in the test program.

70.7.2 Schedule. This paragraph shall be numbered 4.2 and shall include a test schedule integrated with program milestones. The schedule shall identify all tests to be accomplished.

70.8 Test Configuration Management. This section shall be numbered 5.0 and shall identify the specific configuration management process for each unit under test.

70.9 Discrepancy Reporting and Corrective Action. This section shall be numbered 6.0 and shall describe the Discrepancy Reporting and Corrective Action program in support of the test program. The Discrepancy Reporting and Corrective Action forms and instructions for completing those forms shall be included in this section.

70.10 Test Descriptions. This section shall contain Test Descriptions and the Test Breakout Matrix (TBM) for each test to be conducted under this test plan. The Test Descriptions and TBM shall be attached as Appendix A of this plan. This section shall contain a Test Description and Test Breakout Matrix for each test identified for this phase of testing in the System Requirements Allocation Matrix of the Contractor's Master Test Plan.

Each test description shall be an expansion of those identified in the CMTP. The test descriptions shall contain sufficient information to begin the preparation of the test procedures for the test described. The following outline describes the minimum information that shall be included in each test description.

a. Test or Evaluation Title. The test description shall specify the title of the test/evaluation and a number designation.

b. Test or Evaluation Objectives. The test description shall list the objectives/requirements and success criteria the test will validate.

c. Test or Evaluation Approach. The test description shall state the methods to be used to meet the test objectives.

d. Execution Time. The test description shall estimate the total time it will take to execute the test(s) described, including multiple runs of a test procedure.

e. Location. The test description shall identify where testing will be accomplished.

f. Tasks/Activities. The test description shall list tasks or activities that will occur during the test.

g. Personnel. The test description shall identify number and type of personnel required to accomplish the test.

h. Test Equipment. The test description shall identify all test equipment (hardware and software) required to accomplish the test. This section shall define any analysis tools that will be used to support the test.

i. Data Reduction/Analysis. The test description shall describe the test data reduction method, in relation to the Test Equipment identified in item h, to support the test. The test description shall identify any data analysis that will be associated with the test. The contractor shall describe the data expected, when and how the data shall be processed and how the data supports the verification of the requirement.

j. Special Conditions. The test description shall describe any special test conditions, test scenarios, or special operating conditions required to accomplish the test.

The Test Breakout Matrix (TBM) is a graphical display of requirements assigned to each test description. The TBM shall include the test identifier and test name. The TBM shall list each specification requirement by document name, paragraph number, sequence, summarized requirement, test method. A TBM shall come after each associate Test Description.

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APPENDIX VIII

80. CONTENT AND FORMAT OF DT&E/PAT&E TEST PROCEDURES

Note: The DT&E/PAT&E Test Procedure format shall be tailored to the type of test,and or phase of testing required by contract (Production Acceptance, Site Acceptance, Factory Acceptance, Software testing, System testing etc).

80.1 Title Page. The title page shall contain the name of the program and the words TEST PROCEDURE FOR _____ *(enter the specific test name and test identifier)*. The title page shall contain the signatures of the program manager, the test manager, and the quality assurance manager. The title page shall contain all signatures prior to submitting for review.

80.2 Table of Contents. The table of contents shall contain each test and/or subtest and its test identifier with associated paragraph titles and page numbers. The illustrations, tables and figures shall be listed separately.

80.3 Introduction. This section shall be numbered 1.0 and divided into the following paragraphs.

80.3.1 Purpose. This paragraph shall be numbered 1.1 and shall include the following statement in its entirety: "The purpose of this test procedure is to validate the requirements of _____ (*enter contract system specification number*) assigned to this test procedure, for the _____ (*enter official system title and contract number*). This test procedure documents _____ (*enter contractor's company name*) test strategy in order to verify the requirements of the contract."

80.3.2 Scope. This paragraph shall be numbered 1.2 and shall provide an overview/brief description of the test to be accomplished. This paragraph shall describe in general terms the type of test to be accomplished by this procedure and how the test relates to the overall test program.

80.4 Reference Documents. This section shall be numbered 2.0 and shall contain all requirements documents used in the development of the test procedure.

80.5 Test Description. This section shall be numbered 3.0 and divided into the following paragraphs.

80.5.1 System Under Test. This paragraph shall be numbered 3.1 and shall describe the systems/subsystems under test and include a functional block diagram of the system and subsystems.

80.5.2 Interface Under Test. This paragraph shall be numbered 3.2 and shall contain a simplified block diagram with a functional description for each interface under test.

80.5.3 Test Setup. This paragraph shall be numbered 3.3 and shall contain a detailed block diagram of the test interfaces and setup. The diagram and text shall include all connection points, test points, and controls. All test equipment shall be identified on the diagram with connection points.

80.5.4 Test equipment. This paragraph shall be numbered 3.4 and contain a list of all test equipment required in the procedure, by manufacture, part number, and include an area to record serial number and calibration date. All test equipment functions shall be defined.

80.5.5 Personnel. This paragraph shall be numbered 3.5 and shall identify the required personnel to run the test. (engineers, technicians, quality personnel, test director etc.)

80.5.6 Location. This paragraph shall be numbered 3.6 and shall identify the location of all test-related events to be accomplished with the test procedure.

80.5.7 Schedule. Schedule information shall be presented in relation to other program events. The schedule shall identify a Test Readiness Review, test duration, and test debriefing time.

80.6 Test Conduct. This section shall be numbered 4.0 and divided into the following paragraphs.

80.6.1 Safety Considerations. This paragraph shall be numbered 4.1 and shall provide a compilation of unique hazards anticipated. This paragraph shall include any safety procedures to be followed, personal limits, protective equipment to be used, and authorities to be notified for each test. Also a responsible test team member (safety officer) with authority to terminate testing shall be identified.

80.6.2 Requirements Under Test. This paragraph shall be numbered 4.2 and shall list all requirements under test by document name, paragraph number, and text. This paragraph shall include a graphic representation of the requirements allocated to each test in the form of a Test Breakout Matrix (TBM). The TBM shall include the test identifier and the test name. The TBM shall also list each specification requirement by document name, paragraph number, sequence number, summarized requirement, and test method.

80.6.3 Procedures. This paragraph shall be numbered 4.3. (Note: this section may be attached as a Appendix, if numerous procedures are required) The test procedures shall be written in detailed step-by-step instructions. Test Procedures shall contain the following information:

a. Each step shall have an action step with the expected response to the action.

b. Exceptions to action steps shall be instructions to the tester, which shall be defined as such.

c. Test procedure steps that validate requirements shall list the criteria and all requirements verified by the procedure.

d. Test procedures shall be written in logical units of work to facilitate resumption of testing after scheduled or unscheduled interruptions of testing.

e. Each action with an expected response will contain an initial block for the Government test director and/or Government witness.

f. Each test and/or sub-test shall contain a sign-off sheet for the Government test director and the contractor's test director.

80.6.4 Test Data Reduction and Analysis. This paragraph shall be numbered 4.4. The requirements and procedures for the reduction and analysis of test data shall be provided in this paragraph. Data to be recorded during the test, manually or automatically, shall be specified. Requirements for data recording and reduction shall be specified in a manner and detail such that the resulting information will clearly indicate whether or not the requirements have been met.

APPENDIX IX

90. CONTENT AND FORMAT OF DT&E/PAT&E TEST REPORTS

Note: The DT&E/PAT&E Test Report format shall be tailored to the type of test, and or phase of testing required by contract (Production Acceptance, Site Acceptance, Factory Acceptance, Software testing, System testing etc).

90.1 Title Page. The title page shall contain the official name of the system, and the words "TEST REPORT FOR _____" (*enter the specific test and test identifier).* The title page shall contain the signature of the program manager and signatures of those responsible (e.g. Program Manager, Test Manager and Quality Assurance Manager). All signatures shall be present prior to submitting for Government review.

90.2 Test Summary. The Test Summary shall start on a new page. The Test Summary shall contain a brief description of the test and the status of each requirement tested. The Test Summary shall describe any testing deferred and provide justification for deferral.

90.3 Table of Contents. The table of contents shall contain all major section headings.

90.4 Introduction. This section shall be numbered 1.0 and divided into the following paragraphs.

90.4.1 Test Conduct. This paragraph shall be numbered 1.1 and contain a summary of test procedures changes that occurred during the test. Changes to procedures that will be used in future tests shall be incorporated prior to the next scheduled test. This paragraph shall define the schedule and method of incorporating identified changes and identify test set-up changes, or system configuration changes that occurred during the test and the rationale for the change.

90.4.2 Participants. This paragraph shall be numbered 1.2 and shall contain the names of all participants and the functions they performed.

90.4.3 Data Collection and Analysis. This paragraph shall be numbered 1.3. This section shall explain how test data was collected and method of analysis utilized to obtain results.

90.5 Test Log. This section shall be numbered 2.0 and contain a copy of the actual test log developed during the test. Also any discrepancy reports filed during the test and supporting data/documents developed during the test shall be attached to the test log.

90.6 Test Procedures. This section shall be numbered 3.0 and contain a copy of the test procedures used during the test. Each test procedure shall be signed by the Government representative that witnessed the test.

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APPENDIX X

100. SAMPLE CONTRACT INFORMATION FOR FAA STD-024

Note: The samples listed are intended to be samples only and not directive. The intent is to help the developers of the contract get started with the task of developing TEST SOW, DIDs, and CDRLs that will produce a viable DT&E test program (Figures 100-1 through 100-8).

100.1 Statement of Work Samples.

Contractor Master Test Plan

The Contractor shall prepare a Contractor's Master Test Plan which shall serve as the overall test control document for the (*project name*). The plan shall describe all the tests the contractor shall conduct to verify all requirements and comply with the verification methods described in section 4 of (*system specification*).

All Contractor tests specified in section 4 of (*system specification*) shall be a part of the Contractor's Master Test Plan, and the contractor shall identify all in-process and acceptance tests to be performed on units, subsystems and systems to demonstrate compliance with all contract requirements.

The Contractor's Master Test Plan shall include a complete schedule of testing, including times for submittal of preliminary and final documentation required for the testing. It shall also include a specification compliance matrix that clearly indicates, by specification paragraph, what procedure will be used to demonstrate compliance with each requirement in (*system specification*). The Contractor's Master Test Plan format and content shall be developed in accordance with FAA-STD-024.

Test Plans

The contractor shall develop test plans in accordance with the content and format of FAA-STD-024. Information shall be to the level necessary to show adequacy of the test methods and test limits. Specific methods for performance measurements shall be included.

(*List Test Plans required by the project (for example, Software Test Plan, Production Test Plan, Site Acceptance Test Plan etc.)*)

Test Procedures

The contractor shall provide Test Procedures for all test types in section 4 of (*system specification*) and the Contractor's Master Test Plan. No formal testing shall commence until the procedures have been reviewed and approved. The content and format of these Test Procedures shall be developed in accordance with FAA-STD-024.

Test Reports

The Contractor shall provide Test Reports for all tests in (*system specification*) and the Contractor's Master Test Plan. All Test Reports format and content shall be in accordance with FAA-STD-024

100.2 Samples of Data Item Descriptions.

DATA ITEM DESCRIPTION	2. IDENTIFICATION NO(S)	
	AGENCY	NUMBER
1. TITLE: CONTRACTOR'S MASTER TEST PLAN (CMTP)	FAA	UDI-T-FAA-104
3. DESCRIPTION/ PURPOSE 3.1 The CMTP describes the Contractor's overall test program. The CMTP will summarize all tests to be conducted. The CMTP describes methods for implementing and controlling the testing program.	4. APPROVAL DATE	
	5. OFFICE OF PRIMARY RESPONSIBILITY ANR-600	
	6. DCC REQUIRED	
7. APPLICATION/INTERRELATIONSHIP	8. APPROVAL LIMITATION	
	9. REFERENCES FAA-STD-024	
	MSCL NUMBER(S)	

10. PREPARATION/INSTRUCTIONS

10.1 The Master Test Plan shall discuss the overall test program to be conducted by the contractor, define the overall test philosophy, and include planning information on each required test.

10.2 The Master Test Plan content and format shall be prepared in accordance with FAA-STD-024, Appendix VI.

10.2.1 A System Requirements Allocation Matrix shall be developed as part of the Master Test Plan. FAA-STD-024 shall be used as a guide in the development of the matrix.

Figure 100-1 Sample Data Item Description

DATA ITEM DESCRIPTION	2. IDENTIFICATION NO(S)	
	AGENCY	NUMBER
1. TITLE: TEST REPORT	FAA	UDI-T-FAA-112
3. DESCRIPTION/ PURPOSE 3.1 Test Reports document the results of tests. They are used to identify and evaluate discrepancies between expected and actual test results.	4. APPROVAL DATE	
	5. OFFICE OF PRIMARY RESPONSIBILITY ANR-600	
	6. DCC REQUIRED	
7. APPLICATION/INTERRELATIONSHIP	8. APPROVAL LIMITATION	
	9. REFERENCES FAA-STD-024	
	MSCL NUMBER(S)	
10. PREPARATION/INSTRUCTIONS 10.1 The Test Report content and format shall be in accordance with FAA-STD-024, Appendix IX.		

Figure 100-2 Sample Data Item Description

DATA ITEM DESCRIPTION	2. IDENTIFICATION NO(S)	
	AGENCY	NUMBER
1. TITLE: TEST PLAN	FAA	UDI-T-FAA-117A
3. DESCRIPTION/ PURPOSE 3.1 The Test Plan provides detailed planning information for tests to be conducted by the contractor.	4. APPROVAL DATE	
	5. OFFICE OF PRIMARY RESPONSIBILITY ANR-600	
	6. DCC REQUIRED	
7. APPLICATION/INTERRELATIONSHIP 7.1 A separate test plan shall be prepared for each major category of tests as required in the system specification and contract statement of work.	8. APPROVAL LIMITATION	
	9. REFERENCES FAA-STD-024	
	MSCL NUMBER(S)	
10. PREPARATION/INSTRUCTIONS 10.1 SCOPE. The test plan shall include detailed planning information for test conduct. Information shall be to the level necessary to show adequacy of the test methods and test limits. Specific methods for performance measurement shall be included. 10.2 Format. The test plan shall be prepared in accordance with FAA-STD-024, Appendix VII.		

Figure 100-3 Sample Data Item Description

DATA ITEM DESCRIPTION	2. IDENTIFICATION NO(S)	
	AGENCY	NUMBER
1. TITLE: TEST PROCEDURES	FAA	UDI-T-FAA-118
3. DESCRIPTION/ PURPOSE 3.1 This document provides the detailed procedures by which each contractor-conducted test is accomplished.	4. APPROVAL DATE	
	5. OFFICE OF PRIMARY RESPONSIBILITY ANR-600	
	6. DCC REQUIRED	
7. APPLICATION/INTERRELATIONSHIP 7.1 A separate test procedure shall be prepared for each test to be conducted by the contractor.	8. APPROVAL LIMITATION	
	9. REFERENCES FAA-STD-024	
	MSCL NUMBER(S)	
10. PREPARATION/INSTRUCTIONS 10.1 SCOPE. The test procedure shall be step by step detailed procedures required to validate specification requirements. 10.2 Format. The test procedure shall be prepared in accordance with FAA-STD-024, Appendix VIII.		

Figure 100-4 Sample Data Item Description

100.3 Samples of Contract Data Requirements List (CDRL).

1. SEQ	2. MASTER TEST PLAN	6. OFFICE		10. FREQUENCY TWO/R		12. 1st SUBMIT	14. DISTR ASU-320	COPIES
4. AUTHORITY UDI-T-FAA-104	5. CONTRACT REFERENCE SOW PARA 3.x.x.x	7. LT	8. A	9. IAC	11. DATE	13. NEXT SUBMIT	ANR-120	LTO
16. REMARKS Block 8: Government comments/approval within 30 days after receipt. Block 12: Preliminary at CA (PDRL product may be used in lieu of a preliminary with FAA concurrence.) Block 13 Final at PDR Block 14: Quantities reflect the number of copies per addressee rather than the total number of copies.							T.O. ANS-420 ACW-200C ASE-3.2 AOS-230	1/1

Figure 100-5 Sample Contract Data Requirements List

1. SEQ	2. MASTER TEST PLAN		6. OFFICE		10. FREQUENCY TWO/R		12. 1st SUBMIT	14. DISTR ASU-320	COPIES LTO
4. AUTHORITY UDI-T-FAA-104	5. CONTRACT REFERENCE SOW PARA 3.x.x.x.x		7. LT	8. A	9. IAC	11. DATE	13. NEXT SUBMIT	ANR-120	LTO
16. REMARKS Block 8: Government comments/approval within 30 days after receipt. Block 12: Preliminary 30 DPT PDR Block 13 Final: 30 DPT CDR								T.O. ANS-420 ACW-200C ASE-3.2 AOS-230 REGIONS 15 TOTAL	1/1 1/1

Figure 100-6 Sample Contract Data Requirements List

1. SEQ	2. MASTER TEST PLAN		6. OFFICE		10. FREQUENCY TWO/R		12. 1st SUBMIT	14. DISTR ASU-320	COPIES
4. AUTHORITY UDI-T-FAA-118		5. CONTRACT REFERENCE SOW PARA 3.x.x.x	7. LT	8. A	9. IAC	11. DATE	13. NEXT SUBMIT	ANR-120	LTO
16. REMARKS Block 8: Government comments/approval within 30 days after receipt. Block 12: Preliminary 90 DPT scheduled test. Block 13 Final: shall be delivered to the Government not later than seven (7) days prior to the start of the test activity to which the procedures apply; R/ASR								T.O. ANS-420 ACW-200C ASE-3.2 AOS-230	1/1

Figure 100-7 Sample Contract Data Requirements List

<table>
<tr><td>1.
SEQ</td><td colspan="2">2. MASTER TEST PLAN</td><td colspan="2">6.
OFFICE</td><td colspan="2">10. FREQUENCY
TWO/R</td><td>12. 1st
SUBMIT</td><td>14. DISTR
ASU-320</td><td>COPIES</td></tr>
<tr><td colspan="2">4. AUTHORITY
UDI-T-FAA-112</td><td>5. CONTRACT REFERENCE
SOW PARA 3.x.x.x.x</td><td>7.
LT</td><td>8.
A</td><td>9.
IAC</td><td>11.
DATE</td><td>13. NEXT
SUBMIT</td><td>ANR-120</td><td>LTO</td></tr>
<tr><td colspan="7">16. REMARKS

Block 8:
Government comments/approval within 30 days after receipt.

Block 12:
Draft: 30 DATC

Block 13
Final: 30 DARC</td><td></td><td>T.O.

ANS-420

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ASE-3.2

AOS-230</td><td>1/1</td></tr>
</table>

Figure 100–8 Sample Contract Data Requirements List

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